

internal void that contains a gas selected from the group consisting of perfluorocarbons and sulfur hexafluoride, said membrane comprising a phospholipid, and being substantially free of crosslinked proteins and polymers, and further comprising a conjugate that comprises a lipid, a linking group, and a targeting ligand, wherein said linking group is a hydrophilic polymer that is covalently bound to both said lipid and said targeting ligand, and is selected from the group consisting of polyethylene glycol (PEG), polypropylene glycol, polyvinylalcohol, polyvinylpyrrolidone, and copolymers thereof, and wherein said targeting ligand targets cells or receptors selected from the group consisting of myocardial cells, endothelial cells, epithelial cells, tumor cells and the glycoprotein GPIIbIIIa receptor.

127. (Three times amended) A method for the therapeutic delivery *in vivo* of a bioactive agent comprising administering to a patient a therapeutically effective amount of a formulation which comprises, in combination with a bioactive agent, targeted gas-filled vesicles which comprise one or more membranes encapsulating an internal void that contains a gas selected from the group consisting of perfluorocarbons and sulfur hexafluoride, said membrane comprising a phospholipid, and being substantially free of crosslinked proteins and polymers, and further comprising a conjugate that comprises a lipid, a linking group, and a targeting ligand, wherein said linking group is a hydrophilic polymer that is covalently bound to said lipid and said targeting ligand, and is selected from the group consisting of polyethylene glycol (PEG), polypropylene glycol, polyvinylalcohol, polyvinylpyrrolidone, and copolymers thereof, and wherein said targeting ligand targets cells or receptors selected from the group consisting of myocardial cells, endothelial cells, epithelial cells, tumor cells and the glycoprotein GPIIbIIIa receptor.